

Building static websites

It's the `</endings>` way.

GN `</e>` MH



I am seeking to rescue the poor stockinger, the Luddite cropper, the "obsolete" hand-loom weaver, the "utopian" artisan, and even the deluded follower of Joanna Southcott, from the enormous condescension of posterity.

(E.P. Thompson, *The Making of the English Working Class*)

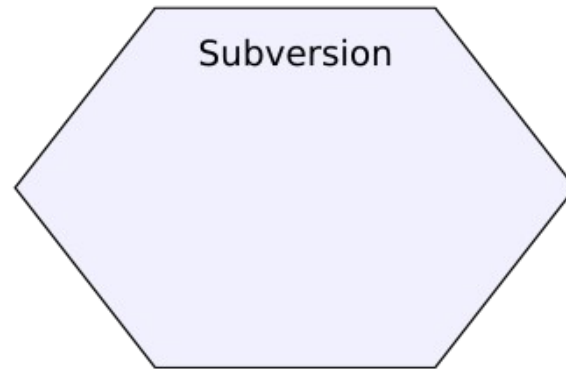


A little detour into history

- Here's an old old site of mine:
 - <http://web.uvic.ca/lancenrd/martin/weblang/contents.htm>
- It still works. It's also in the [Wayback Machine](#)...
- ...where it also still works.
- The HTML still works.
- The JavaScript still works.
- It predates CSS, but if it didn't, the CSS would still work.
- Out of **17** links on the Links page, only **11** work in the Wayback Machine; only **7** work on the current Web.



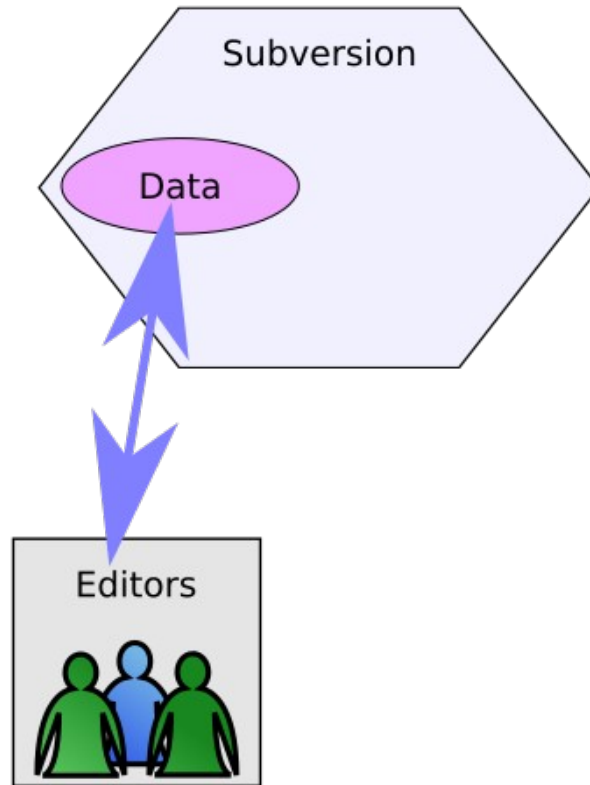
MoEML: The original workflow



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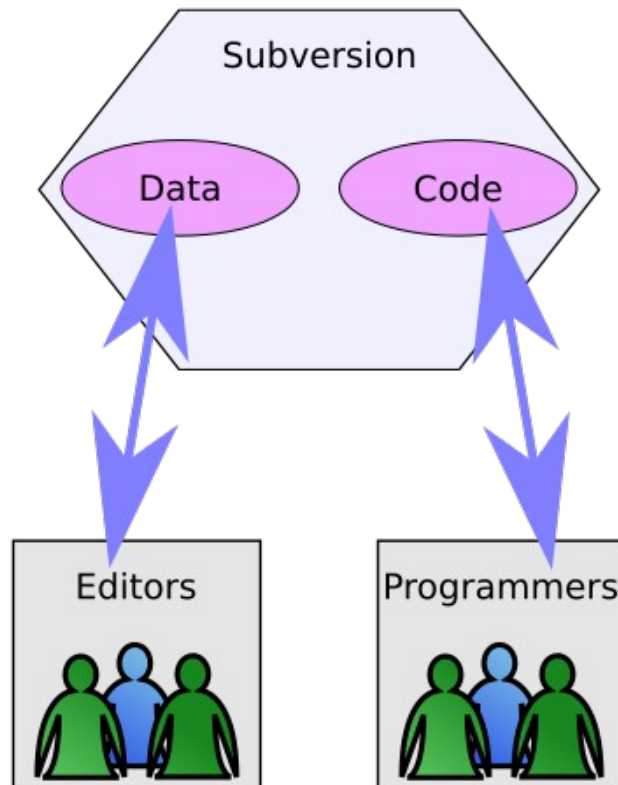
The original workflow



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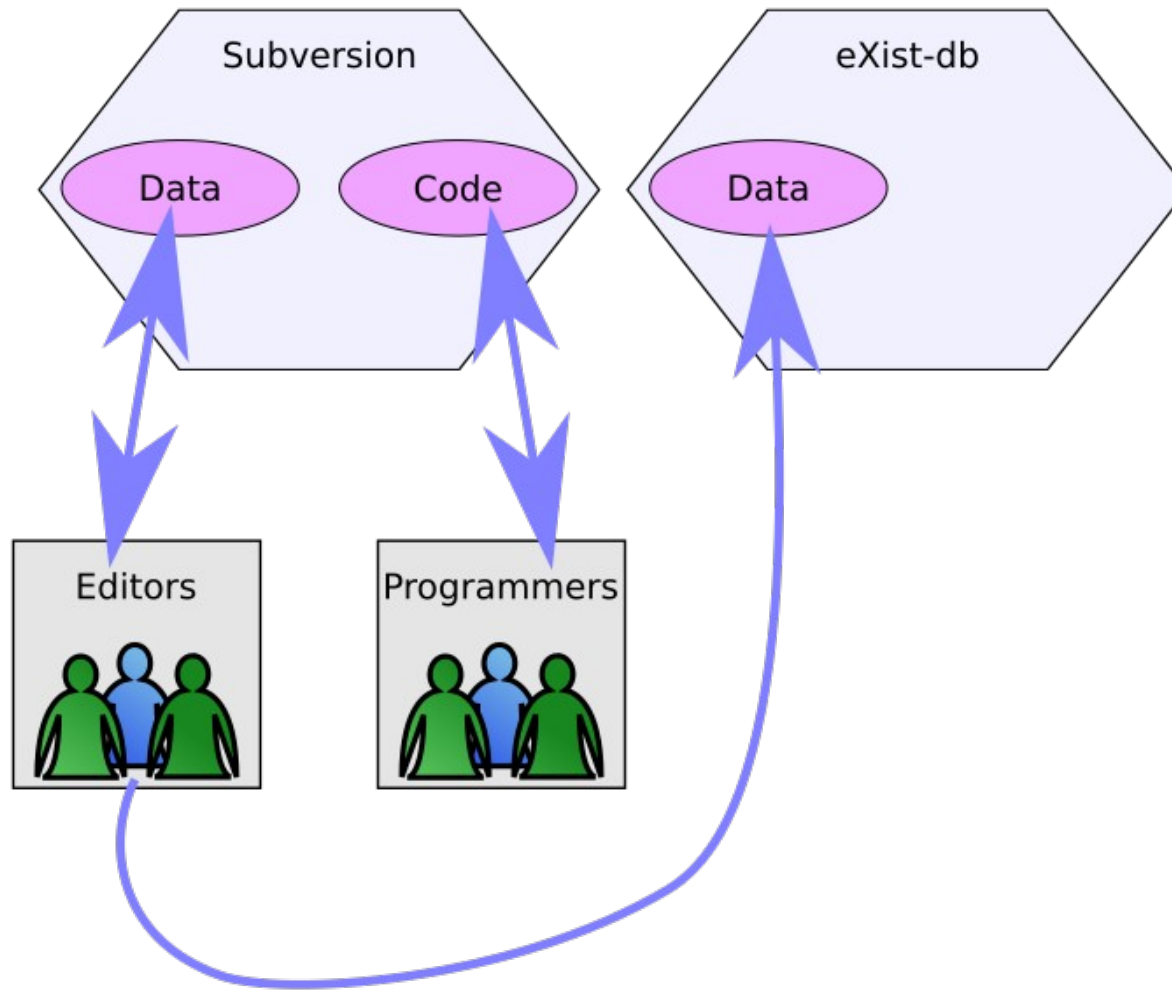
The original workflow



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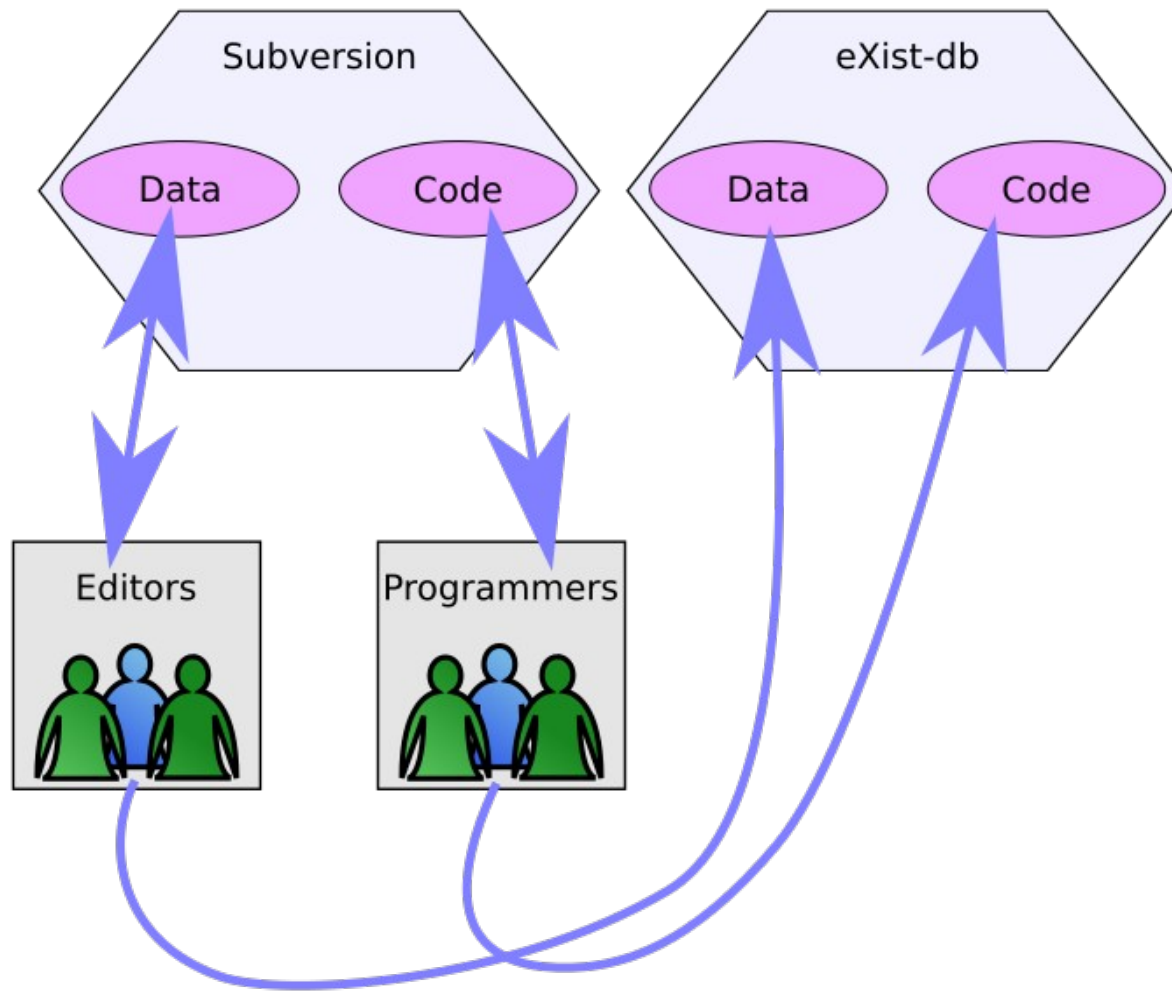
The original workflow



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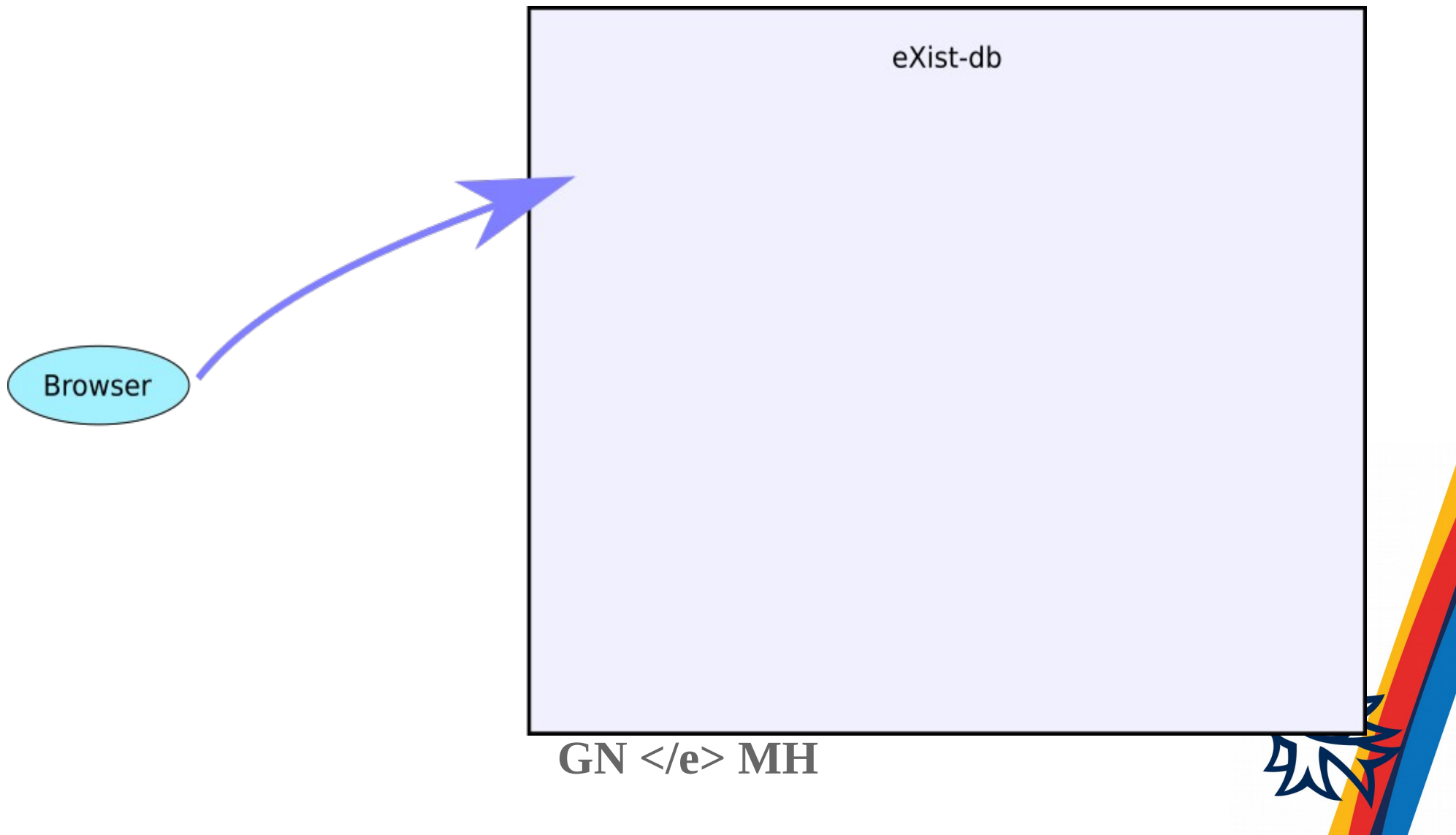
The original workflow



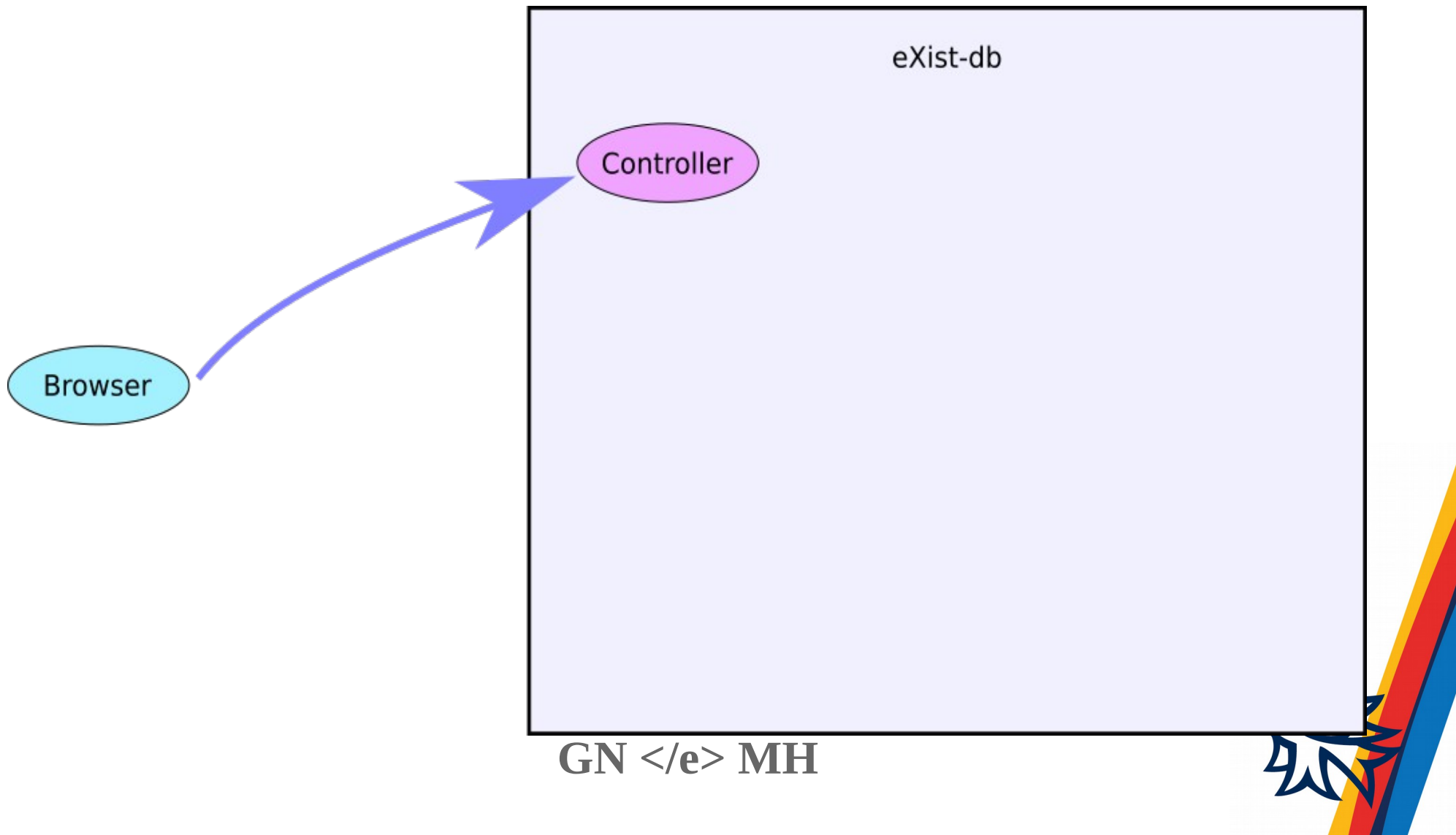
GN </e> MH



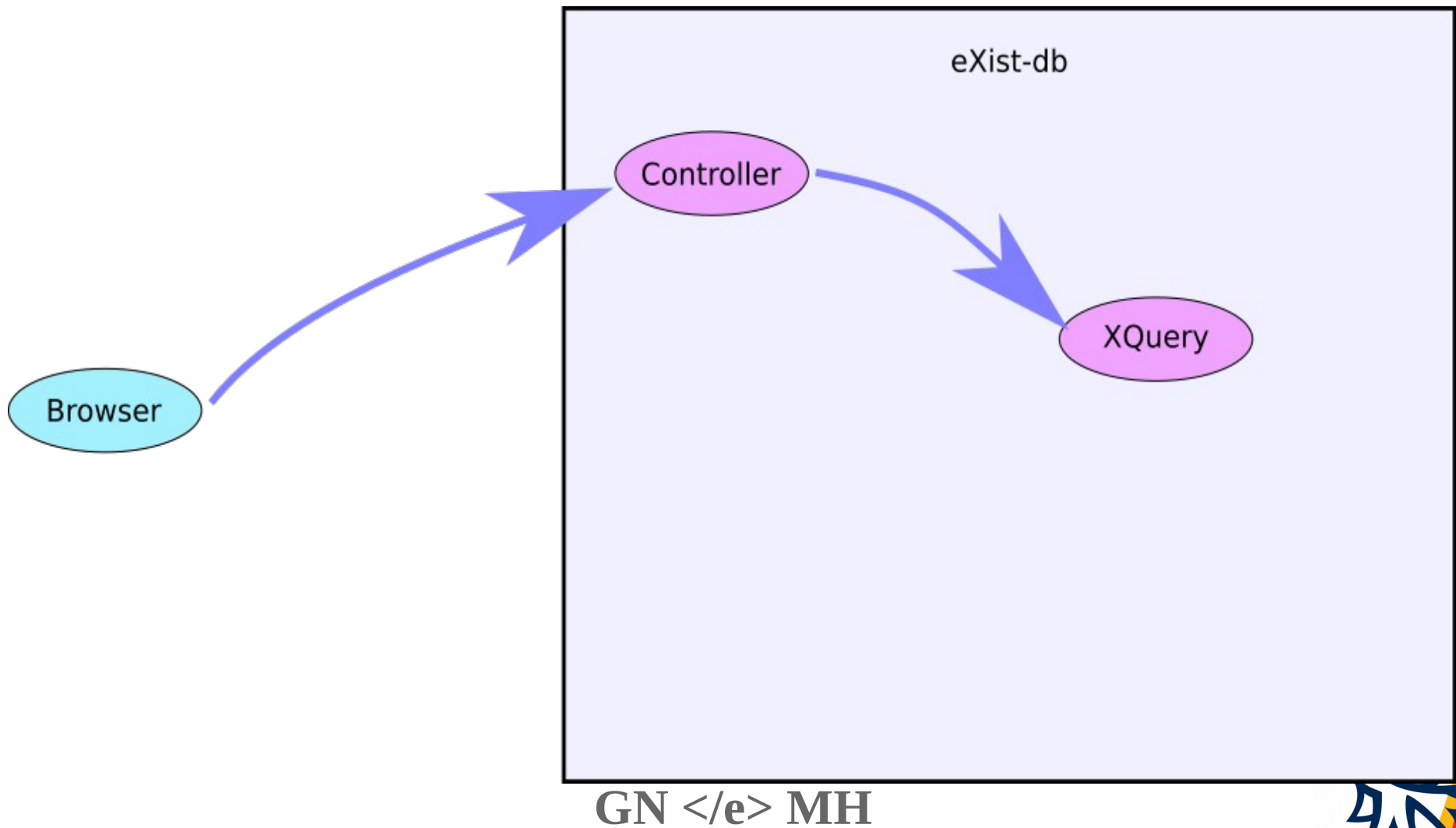
The original webapp



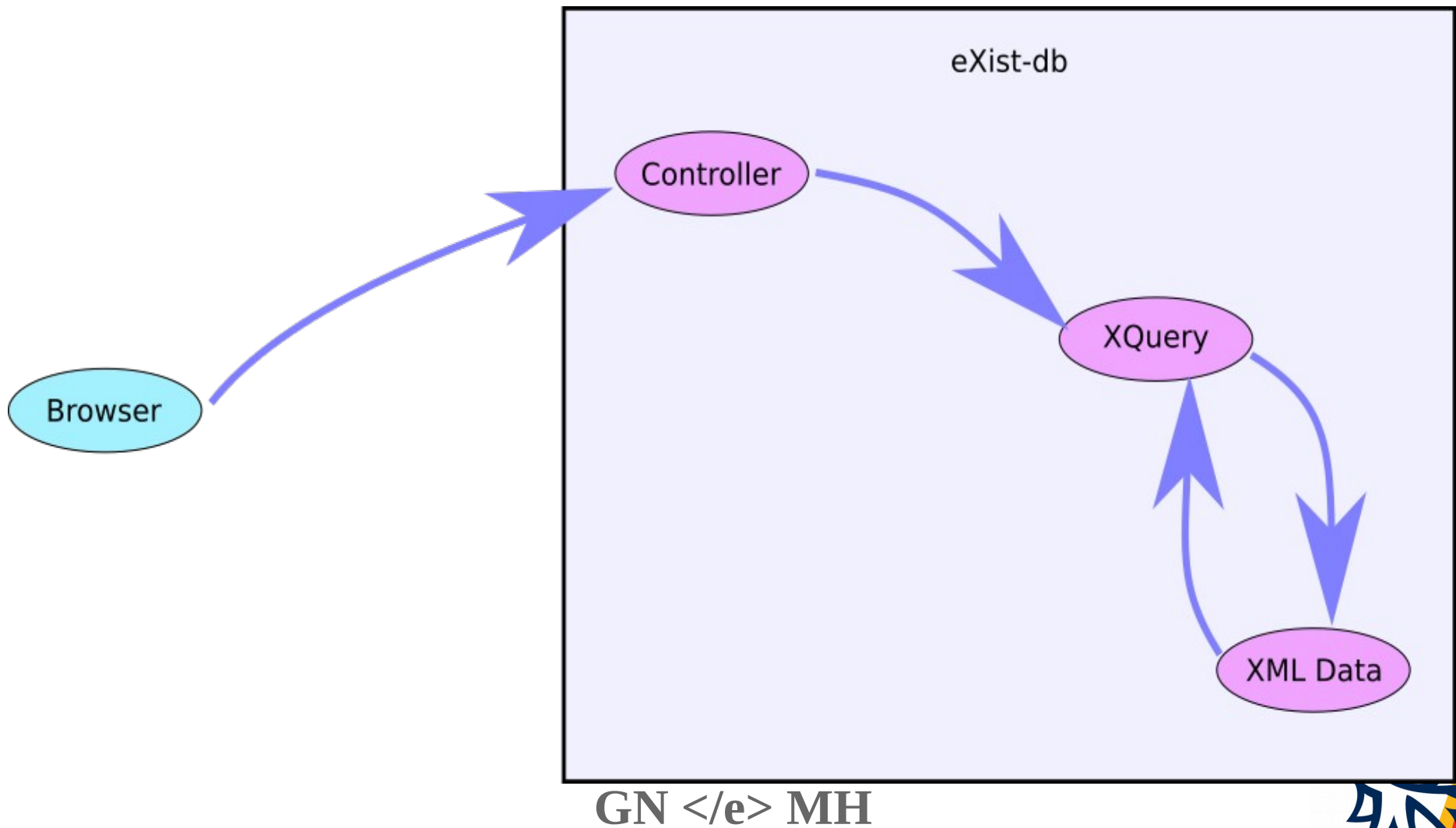
The original webapp



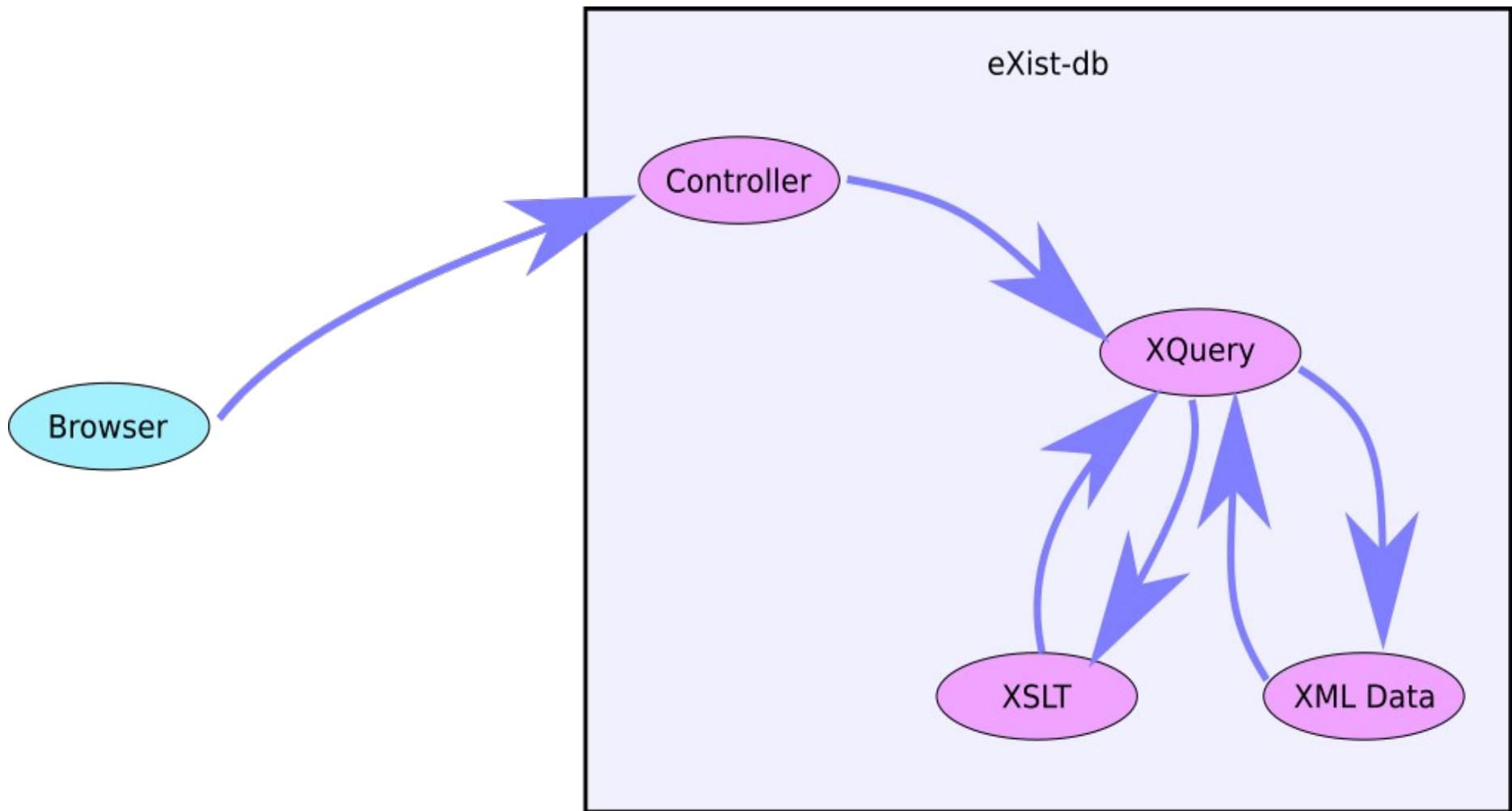
The original webapp



The original webapp

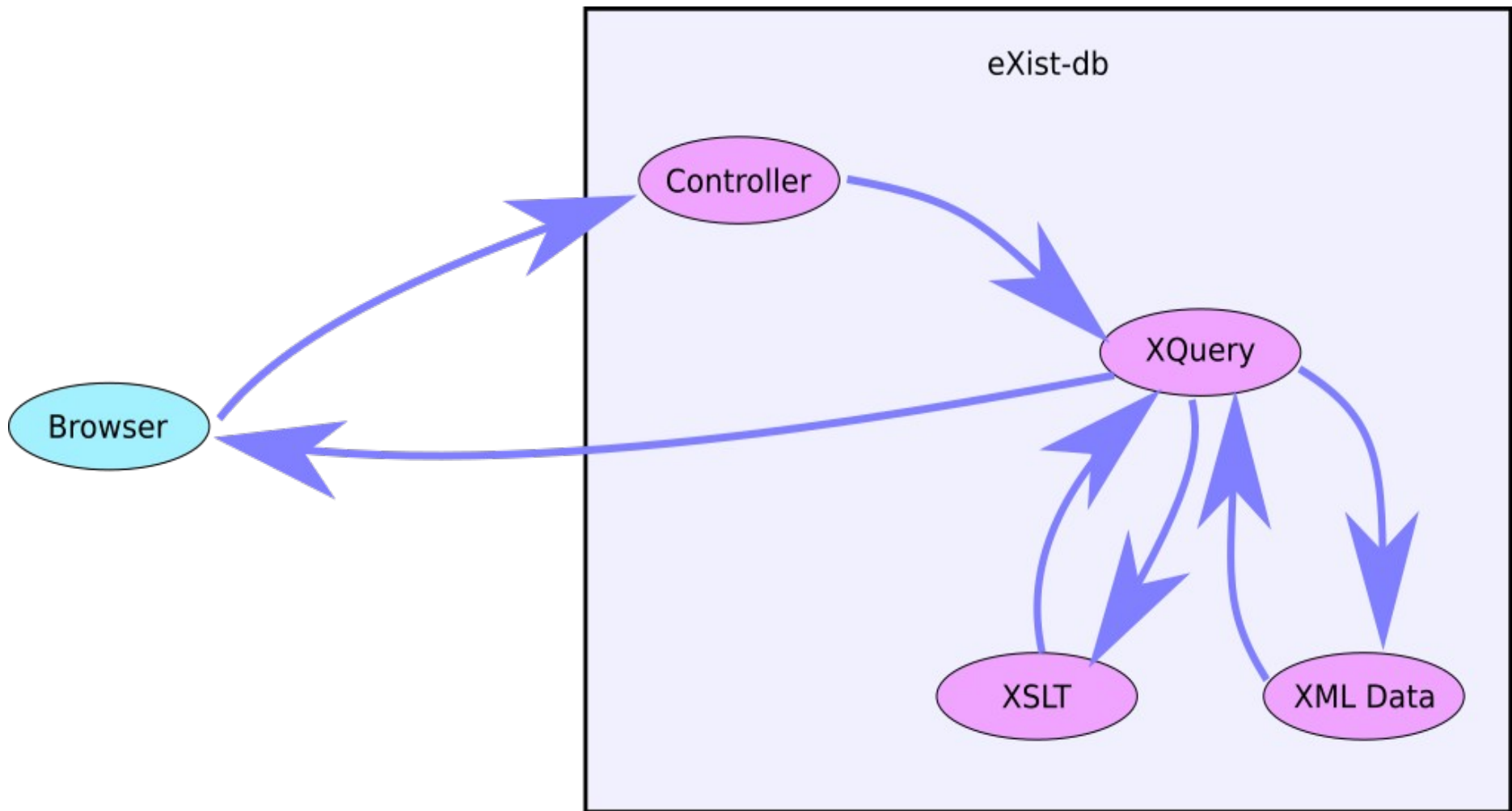


The original webapp



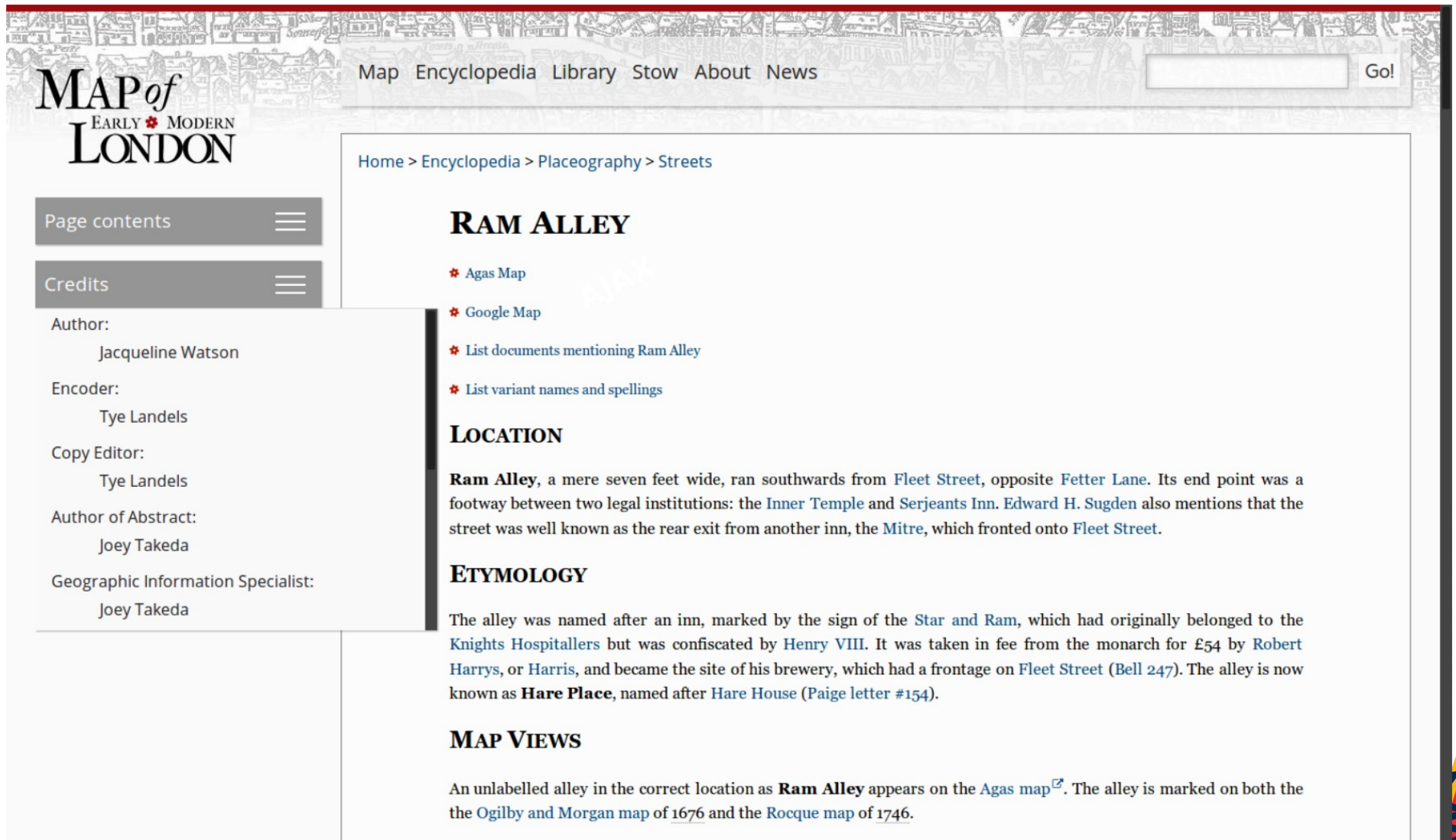
GN > MH

The original webapp



GN </e> MH

Original MoEML page



The screenshot shows the MoEML website interface. At the top, there is a navigation bar with links: Map, Encyclopedia, Library, Stow, About, News. A search bar with a 'Go!' button is on the right. The left sidebar contains a 'Page contents' menu and a 'Credits' section. The main content area displays the title 'RAM ALLEY' and a list of links: Agas Map, Google Map, List documents mentioning Ram Alley, and List variant names and spellings. Below this is the 'LOCATION' section, followed by the 'ETYMOLOGY' section, and finally the 'MAP VIEWS' section. The page is decorated with a historical map of London in the background.

MAP of EARLY MODERN LONDON

Page contents

Credits

Author:
Jacqueline Watson

Encoder:
Tye Landels

Copy Editor:
Tye Landels

Author of Abstract:
Joey Takeda

Geographic Information Specialist:
Joey Takeda

Home > Encyclopedia > Placeography > Streets

RAM ALLEY

- ★ [Agas Map](#)
- ★ [Google Map](#)
- ★ [List documents mentioning Ram Alley](#)
- ★ [List variant names and spellings](#)

LOCATION

Ram Alley, a mere seven feet wide, ran southwards from [Fleet Street](#), opposite [Fetter Lane](#). Its end point was a footway between two legal institutions: the [Inner Temple](#) and [Serjeants Inn](#). [Edward H. Sugden](#) also mentions that the street was well known as the rear exit from another inn, the [Mitre](#), which fronted onto [Fleet Street](#).


ETYMOLOGY

The alley was named after an inn, marked by the sign of the [Star and Ram](#), which had originally belonged to the [Knights Hospitallers](#) but was confiscated by [Henry VIII](#). It was taken in fee from the monarch for £54 by [Robert Harrys](#), or [Harris](#), and became the site of his brewery, which had a frontage on [Fleet Street](#) ([Bell 247](#)). The alley is now known as **Hare Place**, named after [Hare House](#) ([Paige letter #154](#)).

MAP VIEWS

An unlabelled alley in the correct location as **Ram Alley** appears on the [Agas map](#)[↗]. The alley is marked on both the [Ogilby and Morgan map of 1676](#) and the [Rocque map of 1746](#).

Original MoEML page



Map Encyclopedia Library Stow About News

Go!

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Original MoEML page

The screenshot shows the MoEML (Mapping of Early Modern London) website. The header includes navigation links: Map, Encyclopedia, Library, Stow, About, News, and a search bar with a 'Go!' button. The left sidebar contains 'Page contents' and 'Credits' sections. The main content area is titled 'Home > Encyclopedia > Placeography > Streets' and features the entry for 'RAM ALLEY'. The entry includes a list of links (Agas Map, Google Map, List documents mentioning Ram Alley, List variant names and spellings), a 'LOCATION' section, an 'ETYMOLOGY' section, and a 'MAP VIEWS' section. The 'RAM ALLEY' title and the list of links are annotated with red triangles containing the word 'AJAX'. The 'LOCATION' section describes the alley's location and history. The 'ETYMOLOGY' section explains the origin of the name. The 'MAP VIEWS' section mentions the alley's appearance on historical maps. The bottom of the page shows a partial view of a map.

MAP of
EARLY MODERN
LONDON

Map Encyclopedia Library Stow About News

Go!

Home > Encyclopedia > Placeography > Streets

RAM ALLEY

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LOCATION

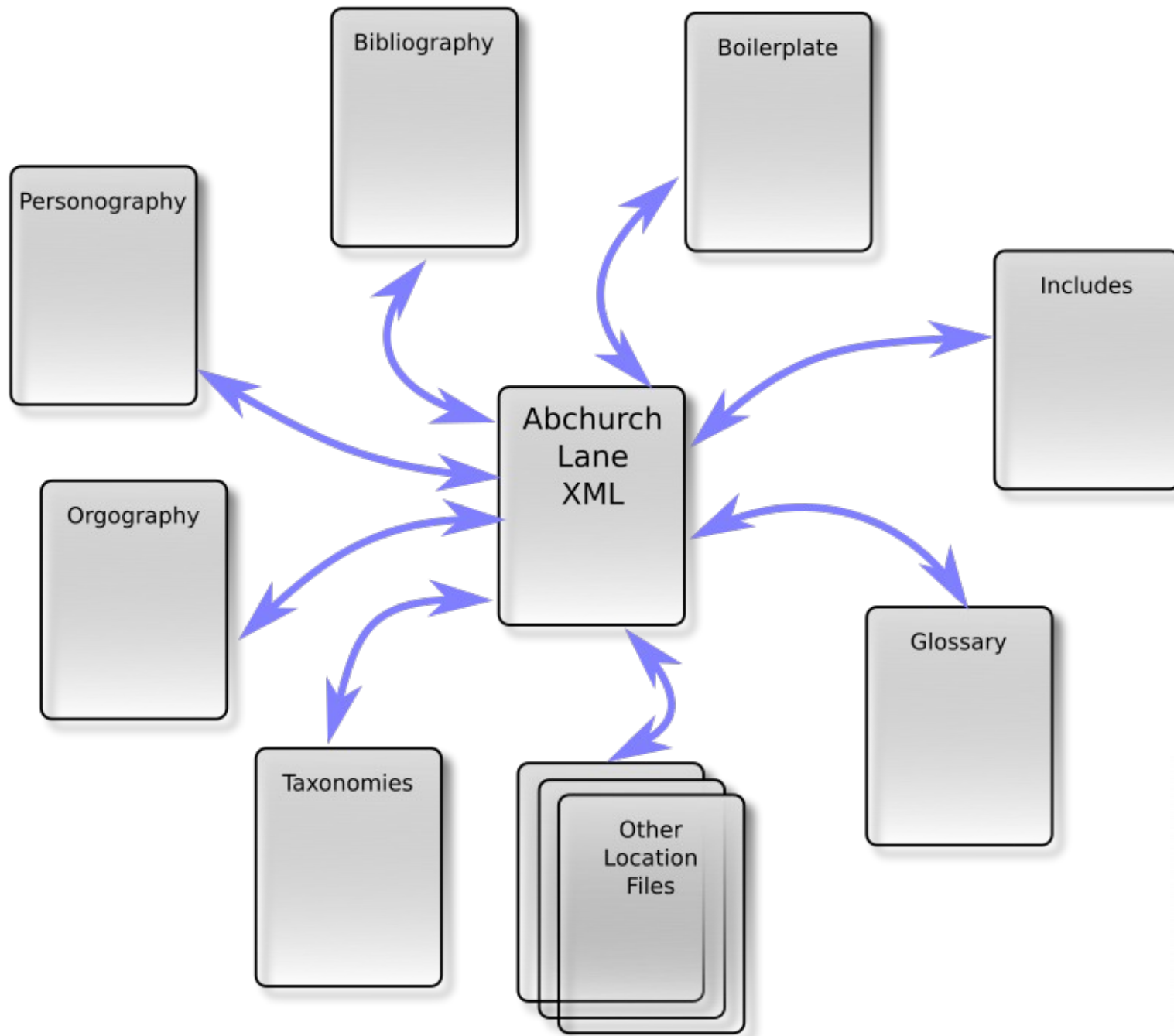
Ram Alley, a mere seven feet wide, ran southwards between the Inner Temple and St Dunstons Church. It was a footway between two legal institutions: the Inner Temple and St Dunstons Church. Edward H. Sugden suggests that the street was well known as the rear exit from another inn, the *Mitre*, which fronted onto Fleet Street.

ETYMOLOGY

The alley was named after the *Ram*, which had belonged to the Knights of the Temple. It was taken in fee from the King in 1254 by Robert Harrys, or Harris, and became the site of his house. It had a frontage on Fleet Street (Bell 247). The alley is now known as **Hare Place**, named after Hare House (Paige letter #154).

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GN </e> MH



Problems with that model

- Collection-level coherence is difficult to maintain.
- Web applications are difficult to archive.
- Taking and using a single document from the collection is tricky.
- Search has to be specially-crafted for each application.
- Versioning is incoherent and editions don't exist.



Static build principles

- Build everything all the time.
- Validate and diagnose relentlessly.
- Make every document coherent and complete.
- Duplicate everything wherever you need it.
- Make HTML documents degrade gracefully.
- Create every possible version of your documents you can imagine being useful.



The MoEML Build Process (1)

1. Validate the **source XML** (RNG and Schematron).
2. Create a *better* version of those documents ("**original XML**").
3. Add **generated XML** versions of all the index, TOC, JSON, tabular and other pages previously created on the fly by eXist.
4. Validate this "original XML".
5. Create "standalone" versions of all the original XML documents ("**standalone XML**").
6. Validate the standalone XML.
7. Create more normative versions of all the XML documents, in which project-specific idiosyncracies are replaced with more conventional encoding strategies ("**standard XML**").
8. Validate the standard XML.



MoEML build process (2)

1. Create **TEI Simple** versions of all the docs.
9. Validate the TEI Simple documents.
10. Create **TEI Lite** versions.
9. Validate the TEI Lite.
10. Create **KML** output from all the location files.
9. Validate the KML.
10. Create all the fragments required for responses to **AJAX** requests (12,172 items).
11. Create **XHTML5** versions of the documents.
9. Validate the XHTML5 versions.

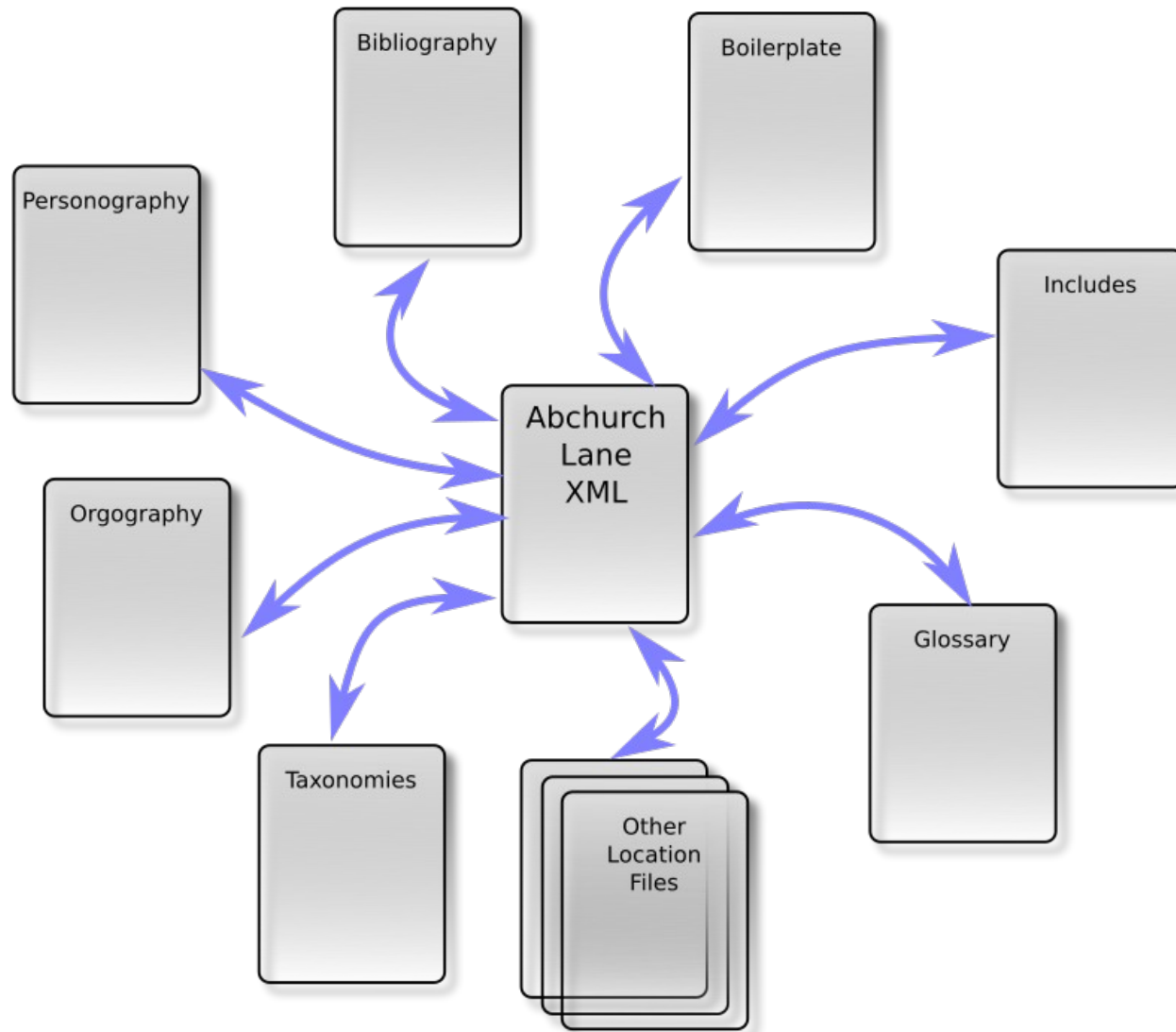


1. “*Standalone XML*” contains:

- Every person mentioned
- Every org mentioned
- Every bibliography item referenced
- The abstract for every location mentioned
- All the variant spellings for all locations mentioned
- Full copies of the document type taxonomy and the responsibility taxonomy.



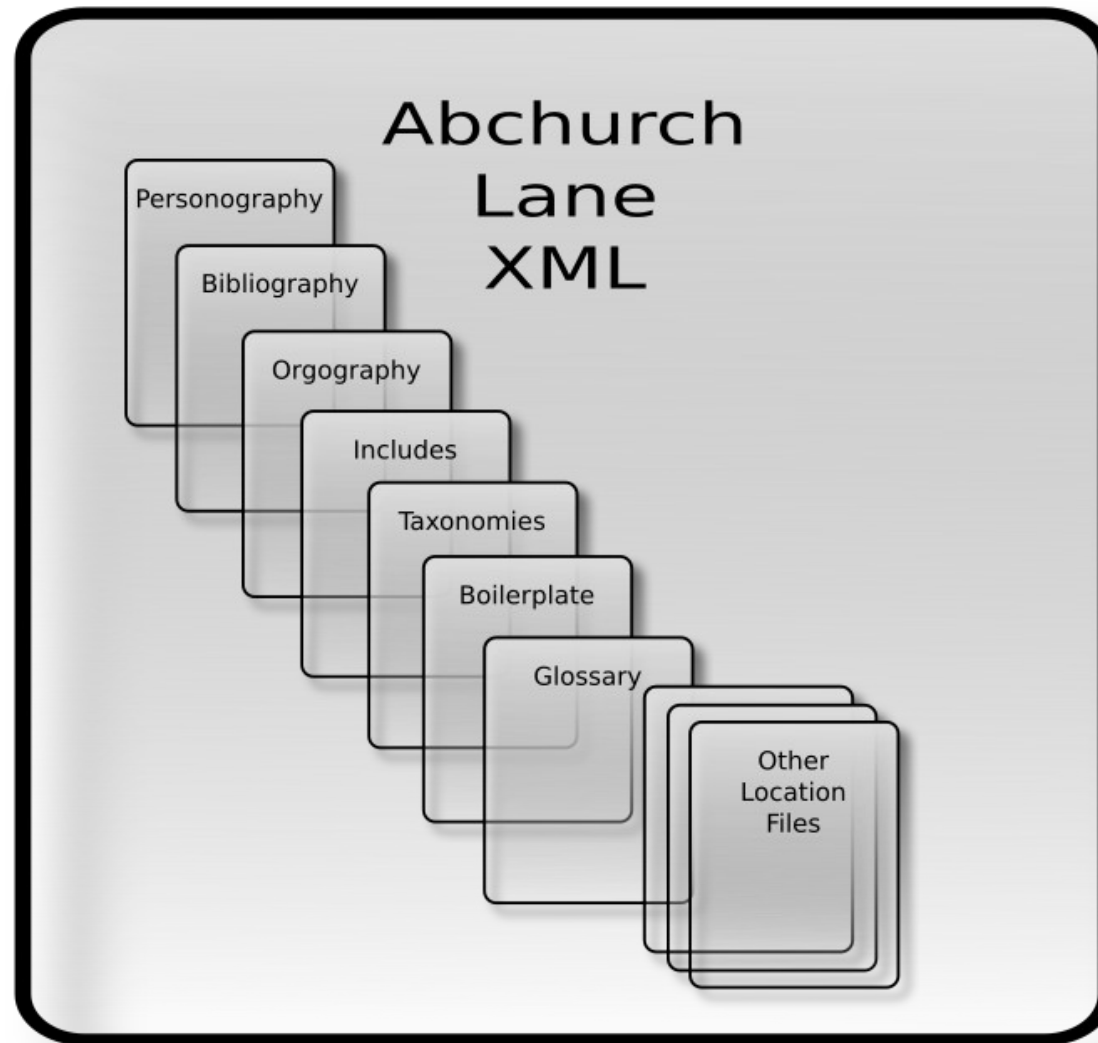
So instead of this:



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...we now have this:



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Who does all this building?

Meet [Mr Jenkins](#).



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Advantages

- All your documents actually exist.
- All your documents actually contain what they appear to contain.
- Searching your documents will work more intuitively.
- Each build is globally coherent, and can constitute a single edition.
- Every document can function outside the collection.
- Future users can take what they want, in a convenient self-contained package, in the format they need.
- Everything works without a web server.*

*Search is a special case. But we can do that too...



FUQs and fringe cases

- All applications will benefit from taking a principled approach like this.
- but...
- Some applications won't be as convertible as MoEML.
- Some applications should remain dynamic.



Where is the line?

- Your application is HUGE!
- Your application is COMPLICATED!
- It almost certainly is NOT too big to convert.
- It probably isn't too complicated either.



Features that make this harder

- Your application **provides** a data service.
- Your application **uses** a data service.
- Your application's main feature is search.
- Your content is intentionally in constant flux.



Providing/consuming services

- Providing: requires server software.
- Providing: may require a database.
- e.g. [Peripleo](#)
- Consuming: maps (tiles/data), social media



Significant searchability

- Your site is premised on the complex searching of large collection(s).
- Potential combinations of search parameters is unknowable.
- Line between document and collection blurry.
- e.g. [Canadian Great War Project](#)



Content in constant flux

- Archive: scraper/harvester
- CMS: WordPress, Drupal, Joomla, etc.



Where to next?

- We aren't too sure about the practical limits of this method in some areas (like search).
- Should we use the sophisticated new JavaScript Web APIs?
- We need to try this on a big, database-driven site. Maybe viHistory?



Break free of your CMS

- Convert it to a static publication system like Hugo <https://hackernoon.com/wordpress-to-static-site-generator-hugo-migration-and-deployment-788a69b93e66>
- Do it gradually with one of many available plugins: WP2Static, HardyPress, Tome, etc.
- Do it manually with wget.



Appendix: What about search?

Diary of Robert Graves 1935-39 and ancillary material

Copyright St John's College Robert Graves Trust

Search Graves Diary Collection

Search for: (Enter keywords separated by spaces)

Search

Special characters

Match: ☒ ALL Keywords ☐ ANY Keyword

Returns/Page 10
Order By Date ascending

Include:

- ☒ Abstracts
- ☒ Diary Entries
- ☒ Enclosures
- ☒ Log Entries

Date Range:

	Day:	Month:	Year:
Begin Search:	22	February	1935
End Search:	6	May	1939

Browse Diary Entries

Day: 22
Month: February
Year: 1935

View

Browse Abstracts

Month: February
Year: 1935

View



A static search engine



- Standalone all-JavaScript no-backend keyword search with stemming and relevance scoring



How it works (1)

- Graves site build process:
 - ...
 - TEI XML → XHTML5
 - Tokenize HTML body.
 - Stem the tokens (Porter stemming).
 - For each token, create a JSON file named for the token.
 - In the JSON file, place a pointer to each document containing the token, with a score for the number of times it occurs in the document.
 - = 11,776 files, 23.2 MB



```
{ "token" : "childish",  
  "instances" :  
  [  
    { "docId" : "diary_1938-03-18",  
      "docTitle" : "Entry for 1938-03-18",  
      "docType" : "diaryentry",  
      "docStartDate" : "1938-03-18",  
      "docEndDate" : "1938-03-18",  
      "count" : 1 },  
  
    { "docId" : "abstract_1938-03",  
      "docTitle" : "Abstract for March 1938",  
      "docType" : "abstract",  
      "docStartDate" : "1938-03-01",  
      "docEndDate" : "1938-03-31",  
      "count" : 1 }  
  ]  
}
```



How it works (2)

- Search page:
 - User types in keywords.
 - Keywords are stemmed by JavaScript.
 - For each unique token, retrieve the JSON file named for it.
 - Combine the scores for each document across the tokens.
 - Do additional filtering by date and document type.
 - Present results ordered by score.



Search Graves Diary Collection

Search for: (Enter keywords separated by spaces)
For proper names, use initial capitals.

Include:

- ☒ Abstracts
- ☒ Diary Entries
- ☒ Enclosures
- ☒ Log Entries

Date Range:

Day: **Month:** **Year:**

Begin Search: 1 January 1937

End Search: 6 May 1939

Searched for: love
Documents found: 48

- [Enclosure – Letter to RG and LR from Karl Goldschmidt 1938-10-17](#) (Score: 6)
- [Enclosure – 5-page letter to RG from Jenny in Liverpool 1938-12-12](#) (Score: 5)
- [Enclosure – Letter to LR from Margaret Russell 1938-09-03](#) (Score: 4)
- [Enclosure – Letter to RG from Ros Graves 1939-01-12](#) (Score: 3)
- [Enclosure – Postcard to RG from David Graves 1938-03-31](#) (Score: 3)
- [Enclosure – Letter from Catherine Nicholson, signed Kate 1937-11-30](#) (Score: 2)
- [Enclosure – Letter from David Graves 1938-10-01](#) (Score: 2)
- [Enclosure – Letter to RG from Jenny Nicholson 1937-08-05](#) (Score: 2)
- [Entry for 1939-03-07](#) (Score: 2)
- [Enclosure – Letter to RG and LR from Sam Graves 1938-11-04](#) (Score: 2)
- [Entry for 1938-04-08](#) (Score: 2)



Pros and cons

- Lightning fast ✓
- Works anywhere ✓
- Usable and effective ✓
- No keywords-in-context ✗
- Only practical for small projects ✗

